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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,666

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Lionel Oisel

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EXAMINER

AMINI, JAVID A

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,666	<b>Applicant(s)</b> OISEL ET AL.	
	<b>Examiner</b> JAVID A. AMINI	<b>Art Unit</b> 2628	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 9, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/28/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8, 10-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-8, 10, and the body of claim 11 are nothing but mathematical functions. Based on Supreme Court Precedent and recent Federal Circuit decisions, the Office's guidance to examiners is that a 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. If neither of these requirements is met by the claim, the method is not a patent eligible process under 101 and should be rejected as being directed to non statutory subject matter.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosser et al. 6100925, hereinafter Rosser, and further in view of Raskar 6733138.

1.

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Rosser teaches an automatic resetting method using electronic means intended for a geometric model of a scene over a picture of the scene, the model and the picture of the scene being stored in the memory of an electronic device in the form of pixel matrices, the scene including fixed references with respect to the remainder of the scene, whereas the references may be specifically detected within the matrices, the picture being taken by a camera arranged in a given zone with respect to the ground in a location of the zone and according to a shot angle determined relative to the scene, the electronic means comparing the picture with the model having been adjusted in perspective by homography for superimposition of the references, see col. 2 lines 27-38 i.e. the system has two distinct modes. First is the search mode wherein each new frame of live video is searched in order to detect and verify a particular target image. Second is the tracking mode, in which the system knows that in the previous frame of video the target image was present. The system further knows the location and orientation of that previous frame with respect to some pre-defined reference coordinate system. The target image locations are tracked and updated with respect to the pre-defined reference coordinate system. Wherein the electronic device calculates a fine homography function  $H_f$  for resetting into three main phases:

Rosser does not explicitly specify a fine homography function in three phases.

However, Raskar teaches a fine homography function where  $H$  is the homography from the camera to the projector, up to a scale. With four or more correspondences between the camera image and the registration image, the eight unknown parameters of  $H$  are determined using a least-squares method. More sophisticated techniques can improve robustness to noise, or outliers. In any case, the registration is done automatically. Furthermore, as described above,

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the relative mapping between any two projectors can be determined by combining Equation (3) and (4). Note, again an explicit calibration is not needed, see col. 5 lines 43-52.

Raskar teaches a first preliminary phase of determination of an average resetting homography consisting in determining an average homography function  $H_m$  applicable to the model with average adjustment over a sample of pictures of the scene taken previously, see col. 4 lines 28-35. Raskar teaches a second, rough resetting phase consisting after application of the average homography function  $H_m$  to the model in determining a rough homography function  $H_g$ , a third, fine resetting phase consisting after application of the rough homography function  $H_g$  to the model in determining a fine homography function  $H_f$ , see col. 5 lines 43-52. The three phases can be contained in a technique of improving robustness to noise, or outliers.

Thus, it would have been obvious to one of ordinary skill in the art to recognize the teachings of Raskar into teachings of Rosser in order to improve robustness to noise, or outliers is done automatically.

2.

Rosser teaches a method according to claim 1, wherein in the preliminary step of determination of an average resetting homography, at least one sample picture is selected among a collection of pictures taken of the given location, the references on the sample picture(s) are detected and an average homographic function  $H_{sub.m}$  is calculated enabling superimposition between the model subjected to the average homographic function and the sample picture(s), superimposition being reached for least error square minimization of the distance between reference points of sample picture(s) and the model subjected to the average homographic function, see fig. 10 #124 “logo” located in a portion of #135.

Claim 7 is rejected with similar reasons as set forth in claim 1, above.

8. Rosser teaches in the Abstract “a live video insertion system that allows insertion of static or dynamic images into a line broadcast, Which is similar to a method according to claim 1 , wherein the pictures evolve with time according to sequences corresponding to different shot locations and/or angles and in that the electronic device comprises means enabling moreover to determine during the first, average resetting preliminary phase, as many average homography functions  $H_{sub.m}$  as there are different shot locations and angles.

9. Raskar teaches a method according to claim 1 , wherein the phases and steps are implemented in the electronic means which are programmable logic units with a program and that the programmable logic comprises a microprocessor or a digital signal processor (DSP) and, preferably, of the general-purpose or dedicated microcomputer type, see fig. 1 #120.

10. Rosser teaches a method according to claim 1 , wherein the scene is a sports ground including references in the form of delineating lines, notably a European or American "football" pitch or a tennis ground, in fig. 10 #135.

Claim 11 is rejected with similar reasons as set forth in claim 1, above.

12. Rosser teaches a device according to claim 11, wherein the electronic means are of the eral-purpose or dedicated microcomputer type, see fig. 10.

13. Rosser teaches an information storage medium including a program intended for operating the device of claim 11, see col. 2 line 43.

14. Rosser teaches an information storage medium including a program intended for operating the device of claim 11 and according to the method of claim 1, see col. 2 line 43.

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***Claim Objections***

Claims 9, 13-14 objected to because of the following informalities: the word “program” has been misspelled. Appropriate correction is required.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAVID A. AMINI whose telephone number is (571)272-7654. The examiner can normally be reached on 7-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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